

**Amendments to the Claims:**

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) An optical transmission device comprising light guides each having light incidence/emission sections, a substrate which fixes the light guides, and optical elements arranged on the substrate to match the light incidence/emission sections of the light guides, wherein the light guides and the substrate are made of different base materials substantially equal in a coefficient of linear expansion and in a rate of dimensional variation due to water absorption.

2. (Original) The optical transmission device according to claim 1, wherein a difference in the rate of dimensional variation due to water absorption is:

not more than 0.6% where a light guide size is 50 mm or less;

not more than 0.3% where the light guide size is 50 to 100 mm;

not more than 0.15% where the light guide size is 100 to 200 mm;

not more than 0.1% where the light guide size is 200 to 300 mm;

not more than 0.08% where the light guide size is 300 to 400 mm;

not more than 0.06% where the light guide size is 400 to 500 mm;

not more than 0.05% where the light guide size is 500 to 600 mm;

not more than 0.04% where the light guide size is 600 to 800 mm; or

not more than 0.03% where the light guide size is 800 to 1000 mm or more.

3. (Original) The optical transmission device according to claim 2, wherein the optical elements are held in a package and arranged on the substrate.

4. (Original) The optical transmission device according to claim 3, wherein the package is in the form of an optical connector or optical plug.

5. (Previously Presented) The optical transmission device according to claim 3,

wherein the package and one of the light guides and the substrate are formed of the same material.

6. (Previously Presented) An optical transmission device comprising light guides each having light incidence/emission sections, a substrate which fixes the light guides, and an optical element arranged on the substrate to match the light incidence/emission sections of the light guides, wherein each of the light guides has plural stepped portions at one end and a vertical face at the other end, and wherein the light guides and the substrate are substantially equal in a coefficient of linear expansion and in a rate of dimensional variation due to water absorption.

7. (Previously Presented) An optical transmission device comprising light guides each having light incidence/emission sections, a substrate which fixes the light guides, and optical elements arranged on the substrate to match the light incidence/emission sections of the light guides, wherein each of the light guides has plural stepped portions at one end, a vertical face at the other end, and askew faces each for altering a direction of optical signals at both ends, and wherein the light guides and the substrate are substantially equal in a coefficient of linear expansion and in a rate of dimensional variation due to water absorption.

8. (Currently Amended) An optical transmission device comprising light guides each having light incidence/emission sections, a substrate which fixes the light guides, and optical elements arranged on the substrate to match the light incidence/emission sections of the light guides, wherein the light guides and the substrate are made of different base materials substantially equal in a coefficient of linear expansion and in a water absorption rate.

9. (Original) The optical transmission device according to claim 8, wherein the optical elements are held in a package and arranged on the substrate.

10. (Original) The optical transmission device according to claim 9, wherein the

package is in the form of an optical connector or optical plug.

11. (Previously Presented) The optical transmission device according to claim 9, wherein the package and one of the light guides and the substrate are formed of the same material.

12. (Preciously Presented) An optical transmission device comprising light guides each having light incidence/emission sections, a substrate which fixes the light guides, and optical elements arranged on the substrate to match the light incidence/emission sections of the light guides, wherein each of the light guides has plural stepped portions at one end and a vertical face provided with a reflecting section or a reflecting/diffusing section at the other end, and wherein the light guides and the substrate are substantially equal in coefficient or linear expansion and in a water absorption rate.

13. (Previously Presented) An optical transmission device comprising light guides each having light incidence/emission sections, a substrate which fixes the light guides, and optical elements arranged on the substrate to match the light incidence/emission section of the light guides, wherein each of the light guides has plural stepped portions at one end, a vertical face at the other end, and askew faces each for altering a direction of optical signals at the both ends, and wherein the light guides and the substrate are substantially equal in a coefficient of linear expansion and in a water absorption rate.

14. (Currently Amended) An optical transmission device comprising light guides each having light incidence/emission sections, a substrate made of a different base material and that fixes the light guides, and optical elements arranged on the substrate to match the light incidence/emission sections of the light guides, wherein an extent of a positional lag between the light incidence/emission sections and the optical elements arising from a difference between the light guides and the substrate in a rate of dimensional variation due to water absorption is not more than 300  $\mu\text{m}$ .

15. (Original) The optical transmission device according to claim 14, wherein the optical elements are held in a package and arranged on the substrate.

16. (Original) The optical transmission device according to claim 15, wherein the package is in the form of an optical connector or optical plug.

17. (Previously Presented) The optical transmission device according to claim 15, wherein the package and one of the light guides and the substrate are formed of the same material.

18. (Previously Presented) An optical transmission device comprising light guides each having light incidence/emission sections, a substrate that fixes the light guides, and optical elements arranged on the substrate to match the light incidence/emission sections of the light guides, wherein each of the light guides has plural stepped portions at one end and a vertical face provided with a reflecting section or a reflecting/diffusing section at the other end, and wherein an extent of a positional lag between the light incidence/emission sections and the optical elements arising from a difference between the light guides and the substrate in a rate of dimensional variation due to water absorption is not more than 300  $\mu\text{m}$ .

19. (Previously Presented) An optical transmission device comprising light guides each having light incidence/emission sections, a substrate that fixes the light guides, and optical elements arranged on the substrate to match the light incidence/emission sections of the light guides, wherein each of the light guides has plural stepped portions at one end, a vertical face at the other end and askew faces each for altering a direction of optical signals at the both ends, and wherein an extent of a positional lag between the light incidence/emission sections and the optical elements arising from a difference between the light guides and the substrate in a rate of dimensional variation due to water absorption is not more than  $\mu\text{m}$ .

20. (Currently Amended) An optical transmission device comprising light guides

each having light incidence/emission sections, a substrate made of a different base material and that fixes the light guides, and optical elements arranged on the substrate to match the light incidence/emission sections of the light guides, wherein a total of differences between the substrate and the light guides in a rate of dimensional variation due to linear expansion and the rate of the dimensional variation due to water absorption is:

not more than 0.6% where the light guide size is 50 mm or less;  
not more than 0.3% where the light guide size is 50 to 100 mm;  
not more than 0.15% where the light guide size is 100 to 200 mm;  
not more than 0.1% where the light guide size is 200 to 300 mm;  
not more than 0.08% where the light guide size is 300 to 400 mm;  
not more than 0.06% where the light guide size is 400 to 500 mm;  
not more than 0.05% where the light guide size is 500 to 600 mm;  
not more than 0.04% where the light guide size is 600 to 800 mm; or  
not more than 0.03% where the light guide size is 800 to 1000 mm or more.

21. (Original) The optical transmission device according to claim 20, wherein the optical elements are held in a package and arranged on the substrate.

22. (Original) The optical transmission device according to claim 21, wherein the package is in the form of an optical connector or optical plug.

23. (Previously Presented) The optical transmission device according to claim 21, wherein the package and one of the light guides and the substrate are formed of the same material.

24. (Previously Presented) An optical transmission device comprising light guides each having light incidence/emission sections, a substrate that fixes the light guides, and optical elements arranged on the substrate to match the light incidence/emission sections of the light guides, wherein each of the light guides has plural stepped portions at one end and

a vertical face provided with a reflecting section or a reflecting/diffusing section at the other end, and wherein a total of differences between the substrate and the light guides in a rate of dimensional variation due to linear expansion and the rate of the dimensional variation due to water absorption is:

- not more than 0.6% where the light guide size is 50 mm or less;
- not more than 0.3% where the light guide size is 50 to 100 mm;
- not more than 0.15% where the light guide size is 100 to 200 mm;
- not more than 0.1% where the light guide size is 200 to 300 mm;
- not more than 0.08% where the light guide size is 300 to 400 mm;
- not more than 0.06% where the light guide size is 400 to 500 mm;
- not more than 0.05% where the light guide size is 500 to 600 mm;
- not more than 0.04% where the light guide size is 600 to 800 mm; or
- not more than 0.03% where the light guide size is 800 to 1000 mm or more.

25. (Previously Presented) An optical transmission device comprising light guides each having light incidence/emission sections, a substrate that fixes the light guides, and optical elements arranged on the substrate to match the light incidence/emission sections of the light guides, wherein each of the light guides has plural stepped portions at one end a vertical face at the other end and askew faces each for altering a direction of optical signals at the both ends, and wherein a total of differences between the substrate and the light guides in a rate of dimensional variation due to linear expansion and the rate of the dimensional variation due to water absorption is:

- not more than 0.6% where the light guide size is 50 mm or less;
- not more than 0.3% where the light guide size is 50 to 100 mm;
- not more than 0.15% where the light guide size is 100 to 200 mm;
- not more than 0.1% where the light guide size is 200 to 300 mm;

not more than 0.08% where the light guide size is 300 to 400 mm;  
not more than 0.06% where the light guide size is 400 to 500 mm;  
not more than 0.05% where the light guide size is 500 to 600 mm;  
not more than 0.04% where the light guide size is 600 to 800 mm; or  
not more than 0.03% where the light guide size is 800 to 1000 mm or more.

26. (Currently Amended) An optical transmission device comprising light guides each having light incidence/emission sections, a substrate made of a different base material and that fixes the light guides, and optical elements arranged on the substrate to match the light incidence/emission sections of the light guides, wherein a relationship between the substrate and the light guides is such that:

a difference in a coefficient of linear expansion is not more than 300% and a difference in a rate of dimensional variation due to water absorption is not more than 0.6% where the light guide size is 50 mm or less;

the difference in the coefficient of linear expansion is not more than 150% and the difference in the rate of dimensional variation due to water absorption is not more than 0.3% where the light guide size is 50 to 100 mm;

the difference in the coefficient of linear expansion is not more than 100% and the difference in the rate of dimensional variation due to water absorption is not more than 0.15% where the light guide size is 100 to 200 mm;

the difference in the coefficient of linear expansion is not more than 80% and the difference in the rate of dimensional variation due to water absorption is not more than 0.1% where the light guide size is 200 to 300 mm;

the difference in the coefficient of linear expansion is not more than 50% and the difference in the rate of dimensional variation due to water absorption is not more than 0.08% where the light guide size is 300 to 400 mm;

the difference in the coefficient of linear expansion is not more than 40% and the difference in the rate of dimensional variation due to water absorption is not more than 0.06% where the light guide size is 400 to 500 mm;

the difference in the coefficient of linear expansion is not more than 30% and the difference in the rate of dimensional variation due to water absorption is not more than 0.05% where the light guide size is 500 to 600 mm;

the difference in the coefficient of linear expansion is not more than 25% and the difference in the rate of dimensional variation due to water absorption is not more than 0.04% where the light guide size is 600 to 800 mm; or

the difference in the coefficient of linear expansion is not more than 15% and the difference in the rate of dimensional variation due to water absorption is not more than 0.03% where the light guide size is 800 to 1000 mm or more.

27. (Original) The optical transmission device according to claim 26, wherein the optical elements are held in a package and arranged on the substrate.

28. (Original) The optical transmission device according to claim 27, wherein the package is in the form of an optical connector or optical plug.

29. (Previously Presented) The optical transmission device according to claim 27, wherein the package and one of the light guides and the substrate are formed of the same material.

30. (Previously Presented) An optical transmission device comprising light guides each having light incidence/emission sections, a substrate that fixes the light guides, and optical elements arranged on the substrate to match the light incidence/emission sections of the light guides, wherein each of the light guides has plural stepped portions at one end and a vertical face provided with a reflecting section or a reflecting/diffusing section at the other end, and wherein a relationship between the substrate and the light guides is such that:



a difference in a coefficient of linear expansion is not more than 300% and a difference in a rate of dimensional variation due to water absorption is not more than 0.6% where the light guide size is 50 mm or less;

the difference in the coefficient of linear expansion is not more than 150% and the difference in the rate of dimensional variation due to water absorption is not more than 0.3% where the light guide size is 50 to 100 mm;

the difference in the coefficient of linear expansion is not more than 100% and the difference in the rate of dimensional variation due to water absorption is not more than 0.15% where the light guide size is 100 to 200 mm;

the difference in the coefficient of linear expansion is not more than 80% and the difference in the rate of dimensional variation due to water absorption is not more than 0.1% where the light guide size is 200 to 300 mm;

the difference in the coefficient of linear expansion is not more than 50% and the difference in the rate of dimensional variation due to water absorption is not more than 0.08% where the light guide size is 300 to 400 mm;

the difference in the coefficient of linear expansion is not more than 40% and the difference in the rate of dimensional variation due to water absorption is not more than 0.06% where the light guide size is 400 to 500 mm;

the difference in the coefficient of linear expansion is not more than 30% and the difference in the rate of dimensional variation due to water absorption is not more than 0.05% where the light guide size is 500 to 600 mm;

the difference in the coefficient of linear expansion is not more than 25% and the difference in the rate of dimensional variation due to water absorption is not more than 0.04% where the light guide size is 600 to 800 mm; or

the difference in the coefficient of linear expansion is not more than 15% and

the difference in the rate of dimensional variation due to water absorption is not more than 0.03% where the light guide size is 800 to 1000 mm or more.

31. (Previously Presented) An optical transmission device comprising light guides each having light incidence/emission sections, a substrate that fixes the light guides, and optical elements arranged on the substrate to match the light incidence/emission sections of the light guides, wherein each of the light guides has plural stepped portions at one end, a vertical face at the other end and askew faces each for altering a direction of optical signals at the both ends, and wherein a relationship between the substrate and the light guides is such that:

a difference in a coefficient of linear expansion is not more than 300% and a difference in a rate of dimensional variation due to water absorption is not more than 0.6% where the light guide size is 50 mm or less;

the difference in the coefficient of linear expansion is not more than 150% and the difference in the rate of dimensional variation due to water absorption is not more than 0.3% where the light guide size is 50 to 100 mm;

the difference in the coefficient of linear expansion is not more than 100% and the difference in the rate of dimensional variation due to water absorption is not more than 0.15% where the light guide size is 100 to 200 mm;

the difference in the coefficient of linear expansion is not more than 80% and the difference in the rate of dimensional variation due to water absorption is not more than 0.1% where the light guide size is 200 to 300 mm;

the difference in the coefficient of linear expansion is not more than 50% and the difference in the rate of dimensional variation due to water absorption is not more than 0.08% where the light guide size is 300 to 400 mm;

the difference in the coefficient of linear expansion is not more than 40% and

the difference in the rate of dimensional variation due to water absorption is not more than 0.06% where the light guide size is 400 to 500 mm;

the difference in the coefficient of linear expansion is not more than 30% and the difference in the rate of dimensional variation due to water absorption is not more than 0.05% where the light guide size is 500 to 600 mm;

the difference in the coefficient of linear expansion is not more than 25% and the difference in the rate of dimensional variation due to water absorption is not more than 0.04% where the light guide size is 600 to 800 mm; or

the difference in the coefficient of linear expansion is not more than 15% and the difference in the rate of dimensional variation due to water absorption is not more than 0.03% where the light guide size is 800 to 1000 mm or more.